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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,613	11/24/2003	Shoji Inagaki	117392	1600
25944	7590	12/22/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			LOUIS JACQUES, JACQUES H	
			ART UNIT	PAPER NUMBER

3661

DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/718,613

Applicant(s)

INAGAKI ET AL.

Examiner

Jacques H. Louis-Jacques

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-22 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ✓ 1) ☒ Notice of References Cited (PTO-892)
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 11/24/03, 4/22/04.

- 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) ☐ Notice of Informal Patent Application (PTO-152)
 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file. The foreign priority document was received on March 15, 2004.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 11/24/2003 and 04/22/2004 have been received and considered by the examiner. Initialed copies of the PTO 1449 forms are herewith attached.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3, 5-6, 10-14, 16-17 and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Taniguchi et al [5,947,221].

Taniguchi et al discloses a vehicular brake force control apparatus for controlling brake force applied to each of the wheels of a motor vehicle. According to Taniguchi et al, there

Art Unit: 3661

is provided determining whether vehicle behavior of a vehicle is liable to become unstable when engine brake acts (figures 2 and 3), estimating an engine brake force when engine brake acts, in the case that it is determined that the vehicle behavior is liable to become unstable. (figures 1B, 3A, column 1), distributing the estimated engine brake force to each wheel as a brake force in accordance with a distribution that stabilizes the vehicle behavior of the vehicle (abstract, columns 2 and 3), and controlling at least one of an actual engine brake force and an actual friction control force that are applied to each wheel, such that the brake force distributed to each wheel is attained. Taniguchi et al also discloses that the vehicle is a rear wheel drive vehicle, the vehicle behavior is determined to be liable to become unstable when engine brake acts in the case that a wheel grip factor of a rear wheel is equal to or less than a predetermined value. Also, Taniguchi et al discloses determining the vehicle behavior is liable to become unstable when engine brake acts in the case that the vehicle is in a non-driven state. See columns 3 and 5. As described in column 21, Taniguchi et al discloses estimating a ground load of each wheel and distributing the engine brake force to the respective wheels in accordance with a ratio that corresponds with a ratio of the ground loads of the wheels. Furthermore, in columns 34 and 35, Taniguchi et al discloses calculating a vehicle target yaw rate based upon a steering amount of the driver, calculating a difference between the vehicle target yaw rate and a vehicle actual yaw rate, and distributing the engine brake force such that a magnitude of the difference between the vehicle target yaw rate and the vehicle actual yaw rate reduces.

Art Unit: 3661

5. Claims 1-2, 5-7, 10-11, 12-13, 16-18 and 21-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Soga [6,811,229].

Soga [US 6811229 B2] discloses a vehicular braking control apparatus and braking control method thereof. According to Soga, there is provided determining whether vehicle behavior of a vehicle is liable to become unstable when engine brake acts (**), estimating an engine brake force when engine brake acts, in the case that it is determined that the vehicle behavior is liable to become unstable (figure 2), distributing the estimated engine brake force to each wheel as a brake force in accordance with a distribution that stabilizes the vehicle behavior of the vehicle (figure 2), and controlling at least one of an actual engine brake force and an actual friction control force that are applied to each wheel, such that the brake force distributed to each wheel is attained (figure 2, 5, 15-17; columns 3, 5, 6). Soga also discloses that the determination device determines the vehicle behavior is liable to become unstable when engine brake acts in the case that a degree of grip of a rear wheel is equal to or less than a predetermined value (column 3). As described in column 7, Soga et al discloses that the vehicle is a rear wheel drive vehicle, the vehicle behavior is determined to be liable to become unstable when engine brake acts. Also, Soga discloses determining the vehicle behavior is liable to become unstable when engine brake acts in the case that the vehicle is in a non-driven state. According to Soga, the determination device reduces a threshold value used on occasions when it is determined that the vehicle behavior is liable to become unstable in accordance with a road surface friction coefficient becoming smaller (columns 7 and 8). The control device, according to Soga, controls the engine brake force based upon the brake force that is

Art Unit: 3661

smallest among the brake forces distributed to driven wheels (column 6, lines 18-37) and the distribution device estimates, when a brake operation is executed by a driver, an overall (cooperative) vehicle target friction brake force based upon a brake operation amount of the driver, and distributes a sum of the estimated engine brake force and the estimated overall vehicle target friction brake force among the respective wheels (columns 1 and 2). See also columns 12 and 13.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3-4, 8-9 14-15, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soga in view of Yasui et al [6,895,317].

Soga does not particularly teach the conditions of the degree of grip of a rear wheel. Yasui et al, on the other hand, discloses a wheel grip factor estimation apparatus, wherein a wheel grip factor is determined and compared to a predetermined value in order to determine whether the vehicle behavior is liable to become unstable when engine brake acts (abstract). According to Yasui et al, there is provided estimating a road surface friction coefficient (μ), estimating a front-rear acceleration at a rear wheel position and a lateral acceleration at a rear wheel position, and calculating the degree of grip of the rear wheel based on the road surface friction coefficient, the front-rear acceleration, and

Art Unit: 3661

the lateral acceleration. See figure 16 and columns 15 and 16. Yasui et al discloses estimating, when a brake operation is executed by a driver, an overall vehicle target friction brake force based upon a brake operation amount of the driver, and distributes a sum of the estimated engine brake force and the estimated overall vehicle target friction brake force among the respective wheels in accordance with a ratio corresponding to a ratio of ground loads of the respective wheels and such that a magnitude of the difference between a target yaw rate and a vehicle actual yaw rate reduces. See columns 1-2, 5. Thus, it would have been obvious to one skilled in the art at the time of the invention to be motivated to modify the vehicular braking control of Soga by incorporating the features from the wheel grip factor of Yasui et al because such modification, as suggested by Yasui et al, would provided a more accurate braking control, while taking into according road surface disturbance.

8. Claims 4, 7-9, 15, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al [5,947,221] in view of Yasui et al [6,895,317].

Taniguchi et al discloses a wheel grip, but fails to particularly teach the conditions associated the degree of grip of a rear wheel. Yasui et al, on the other hand, discloses a wheel grip factor estimation apparatus, wherein a wheel grip factor is determined and compared to a predetermined value in order to determine whether the vehicle behavior is liable to become unstable when engine brake acts (abstract). According to Yasui et al, there is provided estimating a road surface friction coefficient (μ), estimating a front-rear acceleration at a rear wheel position and a lateral acceleration at a rear wheel

position, and calculating the degree of grip of the rear wheel based on the road surface friction coefficient, the front-rear acceleration, and the lateral acceleration. See figure 16 and columns 15 and 16. Yasui et al discloses estimating, when a brake operation is executed by a driver, an overall vehicle target friction brake force based upon a brake operation amount of the driver, and distributes a sum of the estimated engine brake force and the estimated overall vehicle target friction brake force among the respective wheels in accordance with a ratio corresponding to a ratio of ground loads of the respective wheels and such that a magnitude of the difference between a target yaw rate and a vehicle actual yaw rate reduces. See columns 1-2, 5. Thus, it would have been obvious to one skilled in the art at the time of the invention to be motivated to modify the vehicular brake force control of Taniguchi et al by incorporating the features from the wheel grip factor of Yasui et al because such modification, as suggested by Yasui et al, would provided a more accurate braking control, while taking into according road surface disturbance.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6,089,677	Fukumura et al	Jul. 2000
6,317,677	Monzaki et al	Nov. 2001
6,374,162	Tanaka et al	Apr. 2002
6,941,214	Watanabe et al	Sep. 2005

Art Unit: 3661

6,957,874

Hara et al

Oct. 2005

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques H. Louis-Jacques whose telephone number is 571-272-6962. The examiner can normally be reached on M-Th 5:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jacques H Louis-Jacques
Primary Examiner
Art Unit 3661

/jlj

Jacques H. Louis-Jacques
JACQUES H. LOUIS-JACQUES
PRIMARY EXAMINER